

## REMARKS

Claims 1-4, 11-14, 21-24, and 31-35 remain in this application. Claims 1, 11-14, 21, and 31 have been amended. The amendments are supported by the specification and no new matter has been added. No claims have been added or cancelled. The Applicants respectfully request reconsideration of this application in view of the above amendments and the following remarks. The remarks discuss the present claims in the context of the prior rejections.

### 35 U.S.C. §102(b) Rejection - Kistler

The Examiner has previously rejected claims 1-35 under 35 U.S.C. §102(b) as being anticipated by Thomas Kistler, "Continuous Program Optimization", 1999, Ph.D. thesis, Department of Information and Computer Science, University of California, Irvine, CA (hereinafter referred to as "Kistler"). The Applicants respectfully submit that the present claims are allowable over Kistler.

**Claim 1** recites a method comprising "*installing a program onto a target machine, the program having an intermediate representation*", "*executing the program using the intermediate representation and an initial profile data*", "*generating a current profile data*", "*comparing the current profile data with the initial profile data*", and "*recompiling the intermediate representation to optimize the program when the current profile data in comparison with the initial profile data has exceeded a predetermined threshold*". The Applicants respectfully submit that Kistler does not teach or suggest recompiling the intermediate representation to optimize the program when the current profile data in comparison with the initial profile data has exceeded a predetermined threshold.

Deciding when to optimize is discussed in Section 2.6 of Kistler. Referring to page 39, Kistler describes an approach to detect changes in profiling data. As understood by Applicants, the approach is based on comparing two n-dimensional vectors,  $p_t$  and  $p_{t-1}$ , which log the captured profiling values or data for the last two time steps, respectively. This is discussed in the first full paragraph beginning on page 39, as follows:

“Our approach is based on defining a similarity measure  $S$  that reflects the degree of change of profiling data between two consecutive time steps  $t-1$  and  $t$ . Each profiling component  $P$  logs  $n$  distinct values (such as a path counter or a basic block counter) that we represent as an n-dimensional vector  $p$ , and is required to log these profiling values for at least the last two time steps. The similarity measure  $S(P)$  can then be expressed as a function  $S : P \rightarrow [0..1]$  that compares the captured data at time step  $t-1$  with the captured data at time step  $t$ . It returns a similarity value in the range  $[0..1]$ , where 0 denotes complete dissimilarity and 1 denotes complete equivalence.”

Now, as made clear in the second full paragraph beginning on page 39, there is no profiling data in either  $p_t$  or  $p_{t-1}$  at the initialization of a newly loaded application. As discussed:

“However, [the function that computes the geometric angle  $\alpha$  between  $p_t$  and  $p_{t-1}$ ] is not defined in the situation where  $p_{t-1} = 0$  and  $p_t = 0$ . This is the case when the profiling database is first set up and initialized for a newly loaded application.”

Accordingly, as understood by Applicants, Kistler discusses optimizing **based on changes detected in profile data collected only after initialization for a newly loaded application not based on initial profile data**. Accordingly, there is no teaching or suggestion of recompiling the intermediate representation to optimize the program when

the current profile data in comparison with the **initial profile data** has exceeded a predetermined threshold.

Now, in the Advisory Action mailed April 20, 2004, the Examiner referred the Applicants to page 29, paragraph 2 of Kistler, wherein it is stated *"If the particular code optimization had previously not been applied to the procedure, the optimization phase examines profiling data and decides whether to apply it or not (for example, based on whether a certain profiling counter exceeds a certain threshold)*. The Examiner also referred the Applicants to page 38, paragraph 2, wherein it is stated *"Whenever a profiling counter exceeds a predefined threshold, the corresponding program entity is considered hot and is optimized"*.

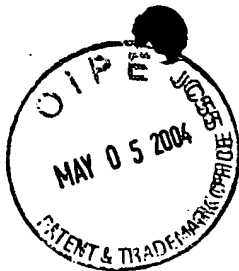
In response, Applicants respectfully submit that the *"thresholds"* discussed in Kistler are different than those recited in claim 1. As understood by Applicants, the profiling counter of Kistler would initially start at zero (i.e., no initial profile data). This is supported by the discussion of the paragraph beginning at the bottom of page 30 of Kistler, wherein it is discussed that hardware counters monitor events that occur during **execution**. Thus, as understood by Applicants, hardware counters do not include **initial profile data**. Accordingly, Applicants respectfully submit that there is no teaching or reasonable suggestion in Kistler of recompiling the intermediate representation to optimize the program **when the current profile data in comparison with the initial profile data has exceeded a predetermined threshold**. Instead, as clearly stated in Kistler, at page 38, in the first paragraph under *"Detecting Changes in Profiling Data"*, *"In our system, optimizations are initially performed when a program has been launched and enough profiling data has been gathered"*.

Anticipation under 35 U.S.C. Section 102 requires every element of the claimed invention be identically shown in a single prior art reference. The Federal Circuit has

indicated that the standard for measuring lack of novelty by anticipation is strict identity.

*“For a prior art reference to anticipate in terms of 35 U.S.C. Section 102, every element of the claimed invention must be identically shown in a single reference.”* In *Re Bond*, 910 F.2d 831, 15 USPQ.2d 1566 (Fed. Cir. 1990).

For at least these reasons, claim 1 is believed to be allowable over Kistler. Claims 2-4 depend from claim 1 and are believed to be allowable therefor, as well as for the recitations independently set forth therein. Claims 11-14, 21-24, and 31-35 are believed to be allowable for similar reasons.



### Conclusion

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance. Applicants respectfully request that the rejections be withdrawn and the claims be allowed at the earliest possible date.

### Request For Telephone Interview

The Examiner is invited to call Brent E. Vecchia at (303) 740-1980 if there remains any issue with allowance of the case.

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### Request For An Extension Of Time

Technology Center 2100

The Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

### Charge Our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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